

L Number	Hits	Search Text	DB	Time stamp
1	63	POLYGALACTOSAMINE (POLY ADJ GALACTOSAMINE)	USPAT; US-PGPUB	2004/02/23 07:56
2	710868	OXIDIZ\$6 OXIDAT\$6 CHITOSAN COSMETIC CM CARBOXYMETHYL	USPAT; US-PGPUB	2004/02/23 07:57
3	63	(POLYGALACTOSAMINE (POLY ADJ GALACTOSAMINE)) AND (OXIDIZ\$6 OXIDAT\$6 CHITOSAN COSMETIC CM CARBOXYMETHYL)	USPAT; US-PGPUB	2004/02/23 07:56
4	709034	OXIDIZ\$6 OXIDAT\$6 COSMETIC CM CARBOXYMETHYL	USPAT; US-PGPUB	2004/02/23 07:58
5	8602	CHITOSAN	USPAT; US-PGPUB	2004/02/23 07:58
6	54	(POLYGALACTOSAMINE (POLY ADJ GALACTOSAMINE)) AND (OXIDIZ\$6 OXIDAT\$6 COSMETIC CM CARBOXYMETHYL) AND CHITOSAN	USPAT; US-PGPUB	2004/02/23 08:20
7	16	poygalactosamine (poly adj galactosamine)	EPO; JPO; DERWENT	2004/02/23 08:24
8	52	polygalactosamine (poly adj galactosamine)	EPO; JPO; DERWENT	2004/02/23 08:23
9	36	(polygalactosamine (poly adj galactosamine)) not (poygalactosamine (poly adj galactosamine))	EPO; JPO; DERWENT	2004/02/23 08:24

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(FILE 'HOME' ENTERED AT 07:19:07 ON 23 FEB 2004)

FILE 'REGISTRY' ENTERED AT 07:19:19 ON 23 FEB 2004

L1 1 S POLYGALACTOSAMINE

FILE 'CAPLUS' ENTERED AT 07:20:15 ON 23 FEB 2004

L2 32 S L1  
L3 0 S POLYGALATOSAMINE  
L4 76 S POLYGALACTOSAMINE  
L5 85 S L1 OR L4  
L6 926401 S OXIDAT?  
L7 366906 S OXIDIZ?  
L8 3 S L5 AND (L6 OR L7)  
L9 16118 S CHITOSAN  
L10 37 S L5 AND L9  
L11 37 S L10 NOT L8

L11 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:167003 CAPLUS  
 DOCUMENT NUMBER: 138:189696  
 TITLE: Water insolubilization of cyclodextrin derivatives  
 while keeping high inclusion capacity  
 INVENTOR(S): Aoki, Nobuyoshi; Hattori, Kenjiro  
 PATENT ASSIGNEE(S): Kanagawa Prefecture, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003064103	A2	20030305	JP 2001-255816	20010827
PRIORITY APPLN. INFO.:			JP 2001-255816	20010827

AB Cyclodextrin (derivs.) are aminated at OH groups and reacted with supports having amino groups and carboxyl groups in one mol. The supports may be carboxyl-induced chitosan, polygalactosamine, and/or polylysine. Thus, monoaminated  $\beta$ -cyclodextrin was reacted with N-succinylchitosan at room temperature in the presence of 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide to give a gel, which was dialyzed and dried to have a white product of cyclodextrin content 46.2%.

L11 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:428678 CAPLUS  
 DOCUMENT NUMBER: 137:10981  
 TITLE: Method for making a cell activating implantable  
 pharmaceutical composition  
 INVENTOR(S): Maingault, Philippe; Bulette Maingault, Martine  
 PATENT ASSIGNEE(S): Fr.  
 SOURCE: PCT Int. Appl., 28 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002043692	A1	20020606	WO 2001-FR3790	20011130
W: AE, AG, AL, AM, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CN, CO, CR, CU, CZ, DM, DZ, EE, FI, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, RO, RU, SD, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
FR 2817479	A1	20020607	FR 2000-15584	20001201
AU 2002022082	A5	20020611	AU 2002-22082	20011130
PRIORITY APPLN. INFO.:			FR 2000-15584	A 20001201
			WO 2001-FR3790	W 20011130

AB The invention concerns a method for making an implantable composition capable of physiolo. stimulating cells containing substances. The method is described in that it consists of fixing a non-enzymic activator on a sterile biopolymer matrix, dehydrating the matrix by freeze-drying and, re-hydrating in vitro the matrix by contacting it with a hydrating medium consisting of a platelet-rich plasma. The release of active substance(s) by the cells and adsorption on the matrix is brought about by contacting the solubilized cell activator with the cells contained in the hydrating medium. The invention is useful for making a composition for treating lesions. Thus, a prolonged-release of platelet-derived growth factors was observed in a biol. medium placed in contact with a biopolymeric matrix (calcium pectate).

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:685885 CAPLUS  
 DOCUMENT NUMBER: 136:289416  
 TITLE: Analysis of the mechanism underlying the expression of  
 plasmid/chitosan complexes using  
 FITC-labeled plasmid

AUTHOR(S): Sato, Toshinori  
CORPORATE SOURCE: Department of Science and Engineering, Keio University, Japan  
SOURCE: Dojin News (2001), 99, 1-5  
CODEN: DONEEA; ISSN: 0385-1516  
PUBLISHER: Dojin Kagaku Kenkyusho  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese  
AB A review. Aminopolysaccharides such as chitosan and polygalactosamine (pGalN) were used to transfer luciferase plasmid into tumor cells. Chitosan largely enhanced the transfection efficiency of luciferase plasmid (pGL3), while pGalN did not at all. Transfection efficiencies of the pGL3/chitosan complexes were dependent on pH of culture medium, stoichiometry of pGL3:chitosan, serum, and mol. mass of chitosan. The transfection mechanism of plasmid/chitosan complexes was analyzed by using FITC-labeled plasmid and sulforhodamine-labeled chitosan. After which, plasmid/chitosan complexes were engulfed by endocytosis and possibly released from endosome due to swelling of lysosomal in addition to swelling of plasmid/chitosan complex, causing the endosome to rupture. Finally, complexes were also observed to accumulate in the nucleus using a confocal laser scanning microscope.

L11 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:526555 CAPLUS  
DOCUMENT NUMBER: 135:376632  
TITLE: In vitro gene delivery mediated by chitosan.  
Effect of pH, serum, and molecular mass of chitosan on the transfection efficiency  
AUTHOR(S): Sato, Toshinori; Ishii, Tsuyoshi; Okahata, Yoshio  
CORPORATE SOURCE: Department of Biomolecular Engineering, Tokyo Institute of Technology, Yokohama, 226-8501, Japan  
SOURCE: Biomaterials (2001), 22(15), 2075-2080  
CODEN: BIMADU; ISSN: 0142-9612  
PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Aminopolysaccharides such as chitosan and polygalactosamine (pGalN) were used to transfer a luciferase plasmid into tumor cells. Chitosan largely enhanced the transfection efficiency of the luciferase plasmid (pGL3), while pGalN did not at all. Transfection efficiencies of the pGL3/chitosan complexes were dependent on pH of culture medium, stoichiometry of pGL3:chitosan, serum, and mol. mass of chitosan. Transfection efficiency at pH 6.9 was higher than that at pH 7.6. Optimum charge ratio of the pGL3:chitosan was 1:5. A chitosan polymer of 15 and 52 kDa largely promoted luciferase activities. Transfection efficiency mediated by chitosan of > 100 kDa was less than that by chitosan of 15 and 52 kDa. Heptamer (1.3 kDa) did not show any gene expression. Cationic liposome (lipofectin)-associated gene expression was inhibited by serum, while chitosan showed resistance to serum.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 5 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:111305 CAPLUS  
DOCUMENT NUMBER: 134:163843  
TITLE: Polymerization of monomers having ethylenic double bonds while inhibiting scale formation  
INVENTOR(S): Shimizu, Toshihide; Watanabe, Mikio; Fujimoto, Tatsuya; Noguki, Genji  
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001040005	A2	20010213	JP 1999-215556	19990729
PRIORITY APPLN. INFO.:			JP 1999-215556	19990729

AB The polymerization reactors have inner-wall coatings which are prepared by applying coatings containing water-soluble anionic macromols. and cationic organic compds. while using water vapor as carriers. Thus, an aqueous solution containing 100:30 (%) poly(acrylic acid)/polyethyleneimine mixture was applied on the inner wall

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of a polymerization reactor while introducing water vapor as coating carriers to give a thin coating which prevented scales from adhering to the reactor walls effectively in 50-batch polymns. of vinyl chloride monomers. The resulted polymers had little fisheyes.

L11 ANSWER 6 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2001:106387 CAPLUS  
DOCUMENT NUMBER: 134:163825  
TITLE: Polymerization of ethylenically unsaturated monomers while inhibiting scale formation  
INVENTOR(S): Shimizu, Toshihide; Watanabe, Mikio; Fujimoto, Tatsuya; Nokuki, Genji  
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001040003	A2	20010213	JP 1999-215554	19990729

PRIORITY APPLN. INFO.: JP 1999-215554 19990729

AB The polymerization reactors have inner-wall coatings which are prepared by applying coatings containing N-containing macromols. (preferably proteins) and tannines while using water vapor as carriers. Thus, a 80:20 (%) water/MeOH solution containing 100:50 (%) gelatin/Chinese tannin mixture was applied on the inner wall of a polymerization reactor while introducing water vapor as coating carriers to give a thin coating which prevented scales from adhering to the reactor walls effectively in 50-batch polymns. of vinyl chloride monomers. The resulted polymers had little fisheyes.

L11 ANSWER 7 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1998:629682 CAPLUS  
DOCUMENT NUMBER: 130:75818  
TITLE: Design of lysosomotropic macromolecular prodrug of doxorubicin using N-acetyl- $\alpha$ -1,4-polygalactosamine as a targeting carrier to hepatoma tissue  
AUTHOR(S): Ouchi, Tatsuro; Tada, Masahiro; Matsumoto, Mitsuo; Ohya, Yuichi; Hasegawa, Kaname; Arai, Yuichi; Kadowaki, Kiyoshi; Akao, Santaro; Matsumoto, Tatsuji; Suzuki, Shigeo; Suzuki, Masuko  
CORPORATE SOURCE: Department of Applied Chemistry Faculty of Engineering & High Technology, Kansai University, Osaka, 564-8680, Japan  
SOURCE: Journal of Bioactive and Compatible Polymers (1998), 13(4), 257-269  
CODEN: JBCPEV; ISSN: 0883-9115  
PUBLISHER: Technomic Publishing Co., Inc.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB  $\alpha$ -1,4- Polygalactosamine (PGA) and N-acetylated  $\alpha$ -1,4- polygalactosamine (NAPGA) are chitosan- and chitin-like biodegradable  $\alpha$ -1,4-linked polysaccharides, resp. Radioactivity of  $^{14}\text{C}$ -50% N-acetylated PGA injected into hepatomized mice, was found to accumulate more in the liver, kidney, ileum and hepatoma tumor tissues, compared with other organs. To provide a lysosomotropic macromol. prodrug of doxorubicin (DXR) targeted to hepatoma tumor tissue, DXR was immobilized on water-soluble 6-O-carboxymethyl(CM)-NAPGA by Gly-Phe-Leu-Gly spacer groups (CM-NAPGA/Gly-Phe-Leu-Gly/DXR conjugate). The conjugate showed cathepsin B susceptible DXR release behavior and exhibited remarkable survival effects in mice bearing MH134Y hepatoma implanted by s.c. (s.c.) implantation/i.v. (i.v.) injection, compared with free DXR and CM-NAPGA-immobilized DXRs with pentamethylene spacer groups (CM-NAPGA/C5/DXR conjugate).

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 8 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1998:451196 CAPLUS  
DOCUMENT NUMBER: 129:183939  
TITLE: Design of macromolecular prodrug of 5-fluorouracil using N-acetylpolygalactosamine as a targeting carrier to hepatoma  
AUTHOR(S): Ouchi, Tatsuro; Tada, Masahiro; Matsumoto, Mitsuo; Ohya, Yuichi; Hasegawa, Kaname; Arai, Yuichi;

CORPORATE SOURCE: Kadowaki, Kiyoshi; Akao, Santaro; Matsumoto, Tatsuji; Suzuki, Shigeo; Suzuki, Masuko  
 SOURCE: Department of Applied Chemistry, Faculty of Engineering, and High Technology Research Center, Kansai University, Suita, 564-8680, Japan  
 Reactive & Functional Polymers (1998), 37(1-3), 235-244  
 CODEN: RFPOF6; ISSN: 1381-5148  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB  $\alpha$ -1,4- Polygalactosamine (PGA) purified from the culture fluid of Paecilomyces sp. I-1I strain and N-acetylated  $\alpha$ -1,4-polygalactosamine (NAPGA) are chitosan- and chitin-like biodegradable, compatible  $\alpha$ -1,4-linked polysaccharides, resp. Partially N-acetylated PGA was found to show the stronger binding activity onto MH134Y hepatoma cells than three kinds of normal lymphocytes, bone marrow, T and B cells from the results of binding assay of  $^{14}\text{C}$ -50% N-acetylated PGA in vitro. Since PGA and NAPGA have the unreducing end groups of galactosamine and N-acetyl galactosamine, resp., they were suggested to exhibit the receptor-mediated affinities to hepatoma cells. In order to provide the lysosomotropic macromol. prodrug of fluorouracil (5FU) having a targeting ability to hepatoma, we synthesized water-soluble 6-O-carboxymethyl-NAPGA-immobilized 5FUs through Gly-Phe-Leu-Gly, monomethylene spacer groups. The obtained conjugate showed the cathepsin-B-susceptible release behavior of 5FU and then exhibited the stronger cytotoxic activity than free 5FU against HLE hepatoma cells in vitro.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 9 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:533553 CAPLUS  
 DOCUMENT NUMBER: 127:195553  
 TITLE: Polysaccharides as protectants in  $\gamma$ -ray sterilization of biologically active agents  
 INVENTOR(S): Onodera, Hirokazu; Suemitsu, Junsuke  
 PATENT ASSIGNEE(S): Asahi Medical Co., Ltd., Japan; Onodera, Hirokazu; Suemitsu, Junsuke  
 SOURCE: PCT Int. Appl., 28 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9727878	A1	19970807	WO 1997-JP269	19970204
W: CA, JP, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2245744	AA	19970807	CA 1997-2245744	19970204
CA 2245744	C	20020312		
EP 888779	A1	19990107	EP 1997-901831	19970204
EP 888779	B1	20030702		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AT 244024	E	20030715	AT 1997-901831	19970204
US 2002044884	A1	20020418	US 1998-117691	19980804
US 6572820	B2	20030603		

PRIORITY APPLN. INFO.: JP 1996-40297 A 19960205  
 WO 1997-JP269 W 19970204

AB Polysaccharides made up of three or more monosaccharide mols. and having a pos. charge, are bound to a multiporous material and used as a protectant for sterilization of proteins and/or peptides which show compatibility to antibodies and antigens of blood cell surface. A polystyrene nonwoven fabric was treated with a mixture containing N-hydroxymethyltribromoacetamide, sulfolan, and trifluoromethanesulfonic acid and anti-human CD4 monoclonal antibody and chitosan were immobilized on the activated fabric to obtain a filtering material. The above material was filled into a column, which was irradiated with  $\gamma$ -ray. ACD-A blood was passed through a column; antigen CD-4 cells were removed by 90 %.

L11 ANSWER 10 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:554316 CAPLUS  
 DOCUMENT NUMBER: 125:329272  
 TITLE: Formation of a DNA/polygalactosamine complex and its interaction with cells

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AUTHOR(S): Sato, Toshinori; Shirakawa, Nobuaki; Nishi, Hirotaka; Okahata, Yoshio  
CORPORATE SOURCE: Dep. of Biomolecular Eng., Tokyo Inst. of Technol., Yokohama, 226, Japan  
SOURCE: Chemistry Letters (1996), (9), 725-726  
CODEN: CMLTAG; ISSN: 0366-7022  
PUBLISHER: Nippon Kagakkai  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB DNA complexes with naturally occurring polysaccharides, polygalactosamine or chitosan, were formed in water. Thermal profiles, CD spectrum, zeta-potentials, and cell uptake were investigated. The DNA/polygalactosamine complex showed higher cell uptake than DNA/chitosan complex did.

L11 ANSWER 11 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:551476 CAPLUS  
DOCUMENT NUMBER: 125:193481  
TITLE: Preparation of anti-carbohydrate antibody for quantification of trace carbohydrate  
INVENTOR(S): Takiguchi, Yasuyuki; Hachiman, Takeshi; Chiba, Tooru  
PATENT ASSIGNEE(S): Shinetsu Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08193100	A2	19960730	JP 1995-88935	19950414
PRIORITY APPLN. INFO.:			JP 1994-281584	19941116

AB Disclosed are anti-carbohydrate antibodies raised by injecting carbohydrate-protein conjugates into bird, mammal, fish, or other vertebrate animal and harvesting antibodies from body fluid or egg. The raised antibodies are labeled and used for immunoassay of carbohydrate. In example, chitosan hexamer conjugated with bovine serum albumin or ovalbumin was prepared, combined with adjuvant, and s.c. injected to chicken, and antibodies were obtained from egg yolk. The antibodies were used for quantitating chitosan. Similarly, antibodies to polygalactosamine were prepared and immunoassay was performed.

L11 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:415926 CAPLUS  
TITLE: A lysosomal release type of macromolecular prodrug of doxorubicin using N-acetylpolygalactosamine as a targeting carrier to hepatoma.  
AUTHOR(S): Ouchi, T.; Tada, M.; Ohya, Y.; Matsumoto, T.; Suzuki, S.; Suzuki, M.  
CORPORATE SOURCE: Faculty Engineering, Kansai University, Suita, 564, Japan  
SOURCE: Book of Abstracts, 212th ACS National Meeting, Orlando, FL, August 25-29 (1996), POLY-159. American Chemical Society: Washington, D. C.  
CODEN: 63BFAF  
DOCUMENT TYPE: Conference; Meeting Abstract  
LANGUAGE: English

AB Since polygalactosamine(PGA) and N-acetyl polygalactosamine(NAPGA) purified from the culture fluid of Paecilomyces sp.I-1 are chitosan-and chitin-like  $\alpha$ -1,4-linked polysaccharides. Partially N-acetylated PGA was found to show stronger binding activity to the hepatoma tumor cells than three kinds of normal lymphocytes, bone marrow, T and B cells from the results of binding assay of 14C-50% acetylated PGA in vitro. High radioactivities were recognized in the liver, kidneys and hepatoma tumor, compared with other organs from results of measurement of body distribution of 14C-50% acetylated PGA. Thus, NAPGA was suggested to exhibit receptor-mediated affinity to hepatoma cells. So, CM-MAPGA/Gly-Phe-Leu-Gly/DXR conjugate was synthesized through the coupling reaction of CM-NAPGA with H-Gly-Phe-Leu-Gly-DXR. CM-NAPGA/tetrapeptide/DXR conjugate was found to exhibit remarkably higher survival effect against mice bearing MH 134Y hepatoma, compared with free DXR and CM-NAPGA/C5/DXR conjugate as a control conjugate.

L11 ANSWER 13 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:951346 CAPLUS  
DOCUMENT NUMBER: 123:343990

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TITLE: Fine porous polysaccharide particles and their use in cosmetics  
 INVENTOR(S): Hasebe, Yoshihiro; Sawada, Michitaka; Furukawa, Makoto; Nakayama, Takako; Kodama, Kenji; Ito, Yasushi; Nakamura, Genichi; Fukumoto, Yasuhisa  
 PATENT ASSIGNEE(S): Kao Corp., Japan  
 SOURCE: PCT Int. Appl., 75 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9525752	A1	19950928	WO 1995-JP489	19950317
W: CN, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 07304643	A2	19951121	JP 1995-39774	19950228
JP 07316203	A2	19951205	JP 1995-41749	19950301
JP 3059071	B2	20000704		
CN 1148857	A	19970430	CN 1995-193128	19950317
CN 1078891	B	20020206		
EP 803513	A1	19971029	EP 1995-912468	19950317
EP 803513	B1	20020703		
R: DE, ES, FR, GB				
TW 419484	B	20010121	TW 1995-84102679	19950320
US 5770187	A	19980623	US 1996-702699	19960913
CN 1380054	A	20021120	CN 2001-133970	20010815
CN 1383810	A	20021211	CN 2001-133963	20010815

PRIORITY APPLN. INFO.:  
 JP 1994-48792 A 19940318  
 JP 1994-62401 A 19940331  
 JP 1995-39774 A 19950228  
 JP 1995-41749 A 19950301  
 JP 1995-42012 A 19950301  
 WO 1995-JP489 W 19950317

AB The title amphoteric particles which can adsorb acids and bases having, resp., an acidity and a basicity stronger than those of the acidic and basic groups of the particles themselves, have an average diameter of  $\leq 50 \mu\text{m}$  and are useful as deodorants for cosmetic formulation, etc. The particles comprise a basic polysaccharide (I) and a polymer of an unsatd. organic acid (II) (e.g. methacrylic acid) or its salt, and are produced by emulsifying or suspending an aqueous solution of I and II in a hydrophobic solvent followed by polymerization. A deodorant was prepared which contained fine chitosan particles having an average diameter of  $0.01\text{-}50 \mu\text{m}$ , especially fine chitosan particles having an available amino content of  $1.0 + 10\text{-}7\text{-}1.0$  t  $10\text{-}2$  mol/g and a sp. surface area of  $10\text{-}300 \text{ m}^2/\text{g}$ . A useful oil component of the deodorant is a polysiloxane having long-chain alkyl groups and m.p. of  $20^\circ$  or above.

L11 ANSWER 14 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:863596 CAPLUS  
 DOCUMENT NUMBER: 123:250681  
 TITLE: Sulfonyl and carboxyl group-containing cyanine dyes for labeling amino group-containing test reagent  
 INVENTOR(S): Shimada, Kenichi; Yano, Hideki  
 PATENT ASSIGNEE(S): Ibiben Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07191029	A2	19950728	JP 1993-350851	19931227
JP 3294415	B2	20020624		

PRIORITY APPLN. INFO.: JP 1993-350851 19931227

AB Water soluble cyanine dyes containing sulfonyl and carboxyl groups are used to label amino group-containing test reagent, such as chitosan, sulfonyl chitosan, polygalactosamine, polynneuraminic acid, antibody, avidin, and protein A. In example, NK3682, NK3942 and NK 3759 were used for labeling antibodies for detecting anti-amylase antibody, and C reactive protein resp.

L11 ANSWER 15 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:494744 CAPLUS

DOCUMENT NUMBER: 122:237762  
 TITLE: O-alkylaminoglycan complexed with label and antigen or antibody for immunoassay  
 INVENTOR(S): Shimada, Kenichi; Ooe, Kazue; Yano, Hideki  
 PATENT ASSIGNEE(S): Ividen Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07035749	A2	19950207	JP 1993-200405	19930719

PRIORITY APPLN. INFO.: JP 1993-200405 19930719

AB O-alkylaminoglycan-immunoreactive substance-label complexes is disclosed for immunoassay. The immunoreactive complexes is optionally bound to avidin or biotin as immunoassay reagent. In example, O-Et chitosan was prepared and conjugated with NK1160 and anti-human IgG antibody, and used with optical fiber-immobilized amylase (or amylase sensor) for anti-amylase antibody determination Also O-Et chitosan-NK 1160-avidin and sensor containing biotinylated anti-calcitonin antibody were prepared and used for determination of calcitonin.

L11 ANSWER 16 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1995:490182 CAPLUS  
 DOCUMENT NUMBER: 122:233354  
 TITLE: Manufacture of antimicrobials by treatment of polysaccharides by radiation and the antimicrobials  
 INVENTOR(S): Kume, Tamikazu; Matsushashi, Shinpei; Hashimoto, Shoji  
 PATENT ASSIGNEE(S): Japan Atomic Energy Res Inst, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07025772	A2	19950127	JP 1993-170534	19930709

PRIORITY APPLN. INFO.: JP 1993-170534 19930709

AB Antimicrobials are manufactured by treatment of polysaccharides with ionizing radiation. Chitosan was irradiated by an electron beam at 500 kGy, the treated chitosan was dissolved in aqueous AcOH, and the solution was adjusted to pH 6.0 to give aqueous 0.1% chitosan solution, which totally controlled Escherichia coli for 47 h. The untreated chitosan gave a lesser effect. The chitosan solution also controlled Fusarium oxysporum for 7 days.

L11 ANSWER 17 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1995:231283 CAPLUS  
 DOCUMENT NUMBER: 122:155734  
 TITLE: Conjugates of multiple functional group-containing high mol. weight substance and cyanine dye as label for immunoassay  
 INVENTOR(S): Ooe, Kazue; Shimada, Kenichi; Sakai, Yasushi  
 PATENT ASSIGNEE(S): Ividen Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06222059	A2	19940812	JP 1993-34475	19930128
JP 3176163	B2	20010611		

PRIORITY APPLN. INFO.: JP 1993-34475 19930128

OTHER SOURCE(S): MARPAT 122:155734

AB Disclosed is a fluorescent label for immunoassay derived from coupling of cyanine dye and a high mol. weight substance containing multiple hydrophilic functional groups. The multiple hydrophilic functional group-containing high mol. weight substance is avidin-biotin, protein A or Ig-ligand, aminoglycan, or other polypeptide binding pair. In example, NK3682-modified avidin were prepared, anti-amylase antibody were immobilized on optical fiber

through biotinylated chitosan, and both were used for immunoassay of amylase.

L11 ANSWER 18 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:708126 CAPLUS  
DOCUMENT NUMBER: 121:308126  
TITLE: Release behavior of 5-fluorouracil from chitosan-gel microspheres modified chemically and their antitumor activities  
AUTHOR(S): Ouchi, T.; Shiratani, M.; Kobayashi, H.; Takei, T.; Ohya, Y.  
CORPORATE SOURCE: Faculty of Engineering, Kansai University, Suita, 564, Japan  
SOURCE: Biotechnol. Bioact. Polym., [Proc. Am. Chem. Soc. Symp.] (1994), Meeting Date 1992, 289-96. Editor(s): Gabelein, Charles G.; Carraher, Charles E., Jr. Plenum: New York, N. Y. CODEN: 60QOAU  
DOCUMENT TYPE: Conference  
LANGUAGE: English

AB In order to provide a device which releases 5-fluorouracil (5FU) in a controlled manner and has targetability to the specific organ cells, chitosan-gel microspheres immobilizing 5FU derivs. (aminopentyl-carbamoyl-5FU, aminopentyl-ester-methylene-5FU) coated with polysaccharides or lipid multilayers were prepared. The chitosan-gel microspheres cross-linked with glutaraldehyde (MS(CM)) were obtained by applying emulsion method using an ultrasonicator. The MS(CM)s were coated with polyanionic polysaccharides, such as CM-N-acetyl- $\alpha$ -1,4-polygalactosamine, CM-chitin and hyaluronic acid, by formation of polyelectrolyte complex membrane to give MS(CMG), MS(CMC) and MS(CMH), resp. Moreover, MS(CML) was obtained by coating MS(CM) with dipalmitoyl phosphatidylcholine (DPPC) multilayer. The release rate of 5FU from the MS(CM) was depressed by immobilization of 5FU derivs. into MS(CM) via covalent bonds and by coating with polysaccharide or DPPC multilayer at 37°C. The temperature-sensitive release behavior of 5FU from MS(CM) was achieved between 37°C and 42°C by coating with DPPC multilayer. Moreover, MS(CML-CM-Poly(GalNAC)) and MS(CML-Lac), MS(CMG) immobilizing 5FU derivs. showed the cell specific cytotoxicities against SK-Hep-1 human hepatoma cells and HLE human hepatoma cells in vitro, resp.

L11 ANSWER 19 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:412123 CAPLUS  
DOCUMENT NUMBER: 121:12123  
TITLE: An examination of the unusual susceptibilities of aminoglycans to enzymic hydrolysis  
AUTHOR(S): Yalpani, Manssur; Pantaleone, David  
CORPORATE SOURCE: The NutraSweet Co., Research and Development 601 East Kensington Road, Mount Prospect, IL 60056, USA  
SOURCE: Carbohydrate Research (1994), 256(1), 159-75 CODEN: CRBRAT; ISSN: 0008-6215  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The hydrolytic susceptibilities of aminoglycans, including chitosan (I), chitin (II), water-soluble II, II azure (dye-modified), and  $\alpha$ -(1 $\rightarrow$ 4)-poly(galactosamine), to a series of com. enzyme prepsns. were examined. An unexpectedly large number of enzyme prepsns. gave rise to varying degrees of aminoglycan hydrolysis. Remarkably, several of these enzyme prepsns. displayed lytic activities towards I that equaled or surpassed those of established catalysts with chitosanolytic activities, e.g. chitinase (III) and lysozyme (IV). Thus, based on their dose-response profiles, a number of proteinases, e.g. pepsin, bromelain, ficin, and pancreatin, were more efficient catalysts for I hydrolysis than a com. III (*Serratia marcescens*) and IV preparation. For a cellulase, hemicellulase, lipase, and proteinase, evidence was obtained that strongly suggested the absence of a common lytic agent. Thus, different profiles were observed when the lytic activities of these enzyme prepsns. were examined in terms of their pH and temperature optima, susceptibilities to substrate concentration and the degree of substrate N-acetylation, and their mol. weight fractions. Similarly, distinctions in hydrolytic efficacy emerged for several enzyme prepsns., when I solns. were subjected to 2 simultaneous or sequential enzyme treatments. I hydrolysis was also observed upon treatment with human salivary prepsns. Preparative-scale hydrolysis of I was performed with papain and hemicellulase prepsns. at pH 3.0 and 40°. The results demonstrated the feasibility of hydrolyzing I, II, and other aminoglycans with several low-cost enzymes.

L11 ANSWER 20 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:404521 CAPLUS

10/058,920

DOCUMENT NUMBER: 121:4521  
TITLE: Aminoglycan sulfate esters for labeling  
immuno-substance for immunoassay  
INVENTOR(S): Shimada, Kenichi; Ooe, Kazue; Sakai, Yasushi; Yano,  
Hideki  
PATENT ASSIGNEE(S): Ividen Co Ltd, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06109731	A2	19940422	JP 1993-199102	19930716
PRIORITY APPLN. INFO.:			JP 1992-238974	19920813

AB Aminoglycan sulfate esters is disclosed for labeling immuno-substances (e.g. antibody) for immunoassay. Thus, chitosan sulfate ester was prepared, conjugated with a goat anti-human IgG antibody and NK 1160 (a cyanine dye), and used for determination of antibody to amylase of human pancreas origin. Similarly, a biotinylated polygalactosamine sulfate ester and an avidin-conjugated NK1160 were prepared and linked to a rabbit anti-human calcitonin antibody which is immobilized on a solid support in a biosensor for calcitonin determination

L11 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:86255 CAPLUS  
DOCUMENT NUMBER: 120:86255  
TITLE: Release behavior of 5-fluorouracil from  
chitosan-gel nanospheres immobilizing  
5-fluorouracil coated with polysaccharides and their  
cell specific cytotoxicity  
AUTHOR(S): Ohya, Yuichi; Shiratani, Masahiro; Kobayashi, Hironao;  
Ouchi, Tatsuro  
CORPORATE SOURCE: Fac. Eng., Kansai Univ., Suita, 564, Japan  
SOURCE: Journal of Macromolecular Science, Pure and Applied  
Chemistry (1994), A31(5), 629-42  
CODEN: JSPCE6; ISSN: 1060-1325  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Small-sized chitosan-gel nanospheres, CNS (average diameter 250 nm), containing 5-fluorouracil (5FU) or immobilizing 5FU derivs. (aminopentylcarbonyl-5FU or aminopentyl-ester-methylene-5FU) were prepared by the glutaraldehyde crosslinking technique and the emulsion method. When chitosan was crosslinked with glutaraldehyde, these 5FU derivs. were simultaneously immobilized to CNS by means of Schiff's base formation. The CNSs were coated with anionic polysaccharides, such as 6-O-carboxymethyl-N-acetyl- $\alpha$ -1,4- polygalactosamine/Na (CM-NAPGA/Na), 6-O-carboxymethyl-chitin/Na (CM-chitin/Na), and sodium hyaluronate, through formation of a polyelectrolyte complex membrane to give CNS/polyanion, i.e., CN/G, CNS/C, and CNS/H, resp. The polyelectrolyte complex of polysaccharide was employed to achieve the controlled release and effective targeting of 5FU by the CNSs. The release rate of 5FU from the CNSs could be controlled by immobilization of 5FU, degree of deacetylation of chitosan used and coating with polysaccharides. Since very few galactosamine residues are known to be able cross-react with ligands for galactose, the galactosamine residues on the surface of CNS/Gs are expected to act as the targeting moieties for hepatocyte. The CNS/G showed the lectin-mediated aggregation phenomenon by the addition of APA lectin. Moreover, CNS/G had the highest cytotoxic activity among the three kinds of CNS/polyanion and CNS in HLE human hepatoma cell culture system in vitro.

L11 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:525275 CAPLUS  
DOCUMENT NUMBER: 119:125275  
TITLE: Water-insoluble biocompatible hyaluronate and polyion  
complex and method of making the same  
INVENTOR(S): Uragami, Tadashi; Tanaka, Yoshiaki; Nishida, Shinji  
PATENT ASSIGNEE(S): Lignyte Co., Ltd., Japan  
SOURCE: Pat. Specif. (Aust.), 39 pp.  
CODEN: ALXXAP  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

10/058,920

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AU 636544	B1	19930429	AU 1992-29626	19921125
EP 544259	A1	19930602	EP 1992-120096	19921125

R: DE, FR, GB, NL

JP 06073103	A2	19940315	JP 1992-316735	19921126
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PRIORITY APPLN. INFO.: JP 1991-312236 19911127

AB The title complex is prepared by reacting an alkali metal salt of hyaluronic acid with a high-mol. compound having amino or imino groups in the presence of an organic acid as a material for an artificial internal organ (no data). Thus, Na hyaluronate and chitosan were reacted in a formic acid solution to give a polyion complex, from which a water-insol. film was obtained.

L11 ANSWER 23 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:496519 CAPLUS

DOCUMENT NUMBER: 119:96519

TITLE: Functionalized biodegradable poly(hydroxyalkanoates) and method of manufacturing same

INVENTOR(S): Yalpani, Manssur

PATENT ASSIGNEE(S): USA

SOURCE: U.S., 9 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5191016	A	19930302	US 1990-554338	19900719
US 5268422	A	19931207	US 1992-973730	19921109

PRIORITY APPLN. INFO.: US 1990-554338 19900719

AB The title polymers YO[[CHR1(CH2)lCOO]m[CHR2(CH2)rCOO]n]qCHR3(CH2)pA(X-Z) (A = CO, CH2; R1-3 = H, C1-9 alkyl or alkenyl, aromatic moiety; X = O, NH; Y = H, saccharide or alkenyl moiety having mol. weight 25-100,000; Z = H, saccharide, alkyl or alkenyl moiety having mol. weight 25-100,000 given that if Y is H, Z is not H; l, r, p = 1-3; m, n = 1-5; q = 5-10,000) are prepared Thus, stirring 1 part cellulose triacetate with 4.1 parts hydrolyzed poly(3-hydroxybutyric acid) in 45 parts 1:14 AcOH-Me2SO mixture gave a product with good film-forming properties.

L11 ANSWER 24 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:473324 CAPLUS

DOCUMENT NUMBER: 119:73324

TITLE: Method and agents for preventing scale deposition in polymerization reactors

INVENTOR(S): Shimizu, Toshihide; Sato, Takanori

PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04339803	A2	19921126	JP 1991-165022	19910610

PRIORITY APPLN. INFO.: JP 1990-208554 19900807

AB Scale deposition is prevented in polymerization reactors in the polymerization of vinyl monomers by coating the inner walls of the reactors with water-soluble basic polysaccharides and water-soluble anionic polymers. Thus, a stainless steel polymerization reactor was coated with chitosan and poly(acrylic acid) ammonium salt and used in the suspension polymerization of vinyl chloride to give PVC with Hunter Color L-value 73 and scale deposition 1 g/m<sup>2</sup>, vs. 73, and 1300, resp., using reactors without coatings.

L11 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:450116 CAPLUS

DOCUMENT NUMBER: 119:50116

TITLE: Method and agents for preventing scale deposition in polymerization reactors

INVENTOR(S): Shimizu, Toshihide; Sato, Takanori

PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04339804	A2	19921126	JP 1991-165023	19910610
JP 2522732	B2	19960807		

PRIORITY APPLN. INFO.: JP 1990-208555 19900807

AB Scale deposition is prevented in polymerization reactors in the polymerization of vinyl monomers by coating the inner walls of the reactors with water-soluble basic polysaccharides and proteins. Thus, a stainless steel polymerization reactor was coated with chitosan and glutenin and used in the suspension polymerization of vinyl chloride to give PVC with Hunter Color L-value 72 and scale deposition 3 g/m<sup>2</sup>, vs. 73, and 1300, resp., using reactors without the coatings.

L11 ANSWER 26 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:434186 CAPLUS

DOCUMENT NUMBER: 119:34186

TITLE: Release behavior of 5-fluorouracil from chitosan gel microspheres immobilizing 5-fluorouracil derivative coated with polysaccharides and their cell specific recognition  
 AUTHOR(S): Ohya, Y.; Takei, T.; Kobayashi, H.; Ouchi, T.  
 CORPORATE SOURCE: Fac. Eng., Kansai Univ., Suita, 564, Japan  
 SOURCE: Journal of Microencapsulation (1993), 10(1), 1-9  
 CODEN: JOMIEF; ISSN: 0265-2048

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In order to provide a device releasing drugs in a controlled manner and having targetability to specific organs or cells, chitosan gel microspheres (CMS), crosslinked with glutaraldehyde, immobilizing 1-[N-(5-aminopentyl)carbamoyl]-5-fluorouracil (I) coated with anionic polysaccharides, such as 6-O-carboxymethyl-N-acetyl- $\alpha$ -1,4-polygalactosamine (CM-NAPGA), 6-O-carboxymethylchitin, alginic acid and heparin, by polyelectrolyte complex membrane formation, were prepared. When chitosan was crosslinked with glutaraldehyde, I was simultaneously immobilized into CMS by Schiff's base formation. Average diameter of CMS obtained was estimated to be about 0.5-1.0  $\mu$ m by SEM observation. In physiol. saline media, only free 5-FU was released from the CMS but I and any 5-FU derivative was not. Release rate of 5-FU from the CMS was reduced by coating with polyelectrolyte complex membrane of cationic chitosan and anionic polysaccharides. CMS coated with CM-NAPGA showed a lectin-mediated specific aggregation phenomenon by addition of Abrus precatorius agglutinin. Moreover, the CMS immobilizing I coated with CM-NAPGA showed higher growth-inhibitory effect against SK-Hep-1 (human hepatoma) cells in vitro than the CMS coated with other polysaccharides.

L11 ANSWER 27 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:27916 CAPLUS

DOCUMENT NUMBER: 116:27916

TITLE: Design of polysaccharide-5-fluorouracil conjugates exhibiting antitumor activities  
 AUTHOR(S): Ouchi, T.; Banba, T.; Huang, T. Z.; Ohya, Y.  
 CORPORATE SOURCE: Fac. Eng., Kansai Univ., Suita, 564, Japan  
 SOURCE: ACS Symposium Series (1991), 469(Polym. Drugs Drug Delivery Syst.), 71-83  
 CODEN: ACSMC8; ISSN: 0097-6156

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In order to provide a macromol. prodrug of 5-fluorouracil (5FU) with reduced side-effects, having affinity for tumor cells and exhibiting a high antitumor activity, the design of polysaccharide-5FU conjugates was investigated. Chitin-5FU, chitosan-5FU,  $\alpha$ -1,4-polygalactosamine-5FU, partially N-acetylated  $\alpha$ -1,4-polygalactosamine-5FU, hyaluronic acid-5FU, and dextran-5FU conjugates exhibited significant survival effect against p388 lymphocytic leukemia in mice by i.p. transplantation/i.p. injection. Chitosan-5FU, chitosamino-oligosaccharide-FU, and galactosamino-oligosaccharide-5FU conjugates showed higher growth-inhibitory effects against MH134Y hepatoma and Meth-A fibrosarcoma in mice than 5FU, chitin, oligosaccharides and their blends by s.c. implantation/i.v. injection. The obtained conjugates did not display an acute toxicity in the high dose ranges.

L11 ANSWER 28 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:680745 CAPLUS

10/058,920

DOCUMENT NUMBER: 115:280745  
TITLE: Synthesis of poly(3-hydroxyalkanoate) conjugates;  
PHA-carbohydrate and PHA-synthetic polymers  
AUTHOR(S): Yalpani, Manssur; Marchessault, Robert H.; Morin,  
Frederick G.; Monasterios, Clevys J.  
CORPORATE SOURCE: Pulp Pap. Res. Cent., McGill Univ., Montreal, QC, H3A  
2A3, Can.  
SOURCE: Polymer Preprints (American Chemical Society, Division  
of Polymer Chemistry) (1991), 32(3), 224-5  
CODEN: ACPPAY; ISSN: 0032-3934  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Polymer conjugates were prepared by the partial depolymn. of  
poly( $\beta$ -hydroxybutyrate) in the presence of chitosan,  
cellulose acetate, and poly(galactosamine).

L11 ANSWER 29 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1991:675300 CAPLUS  
DOCUMENT NUMBER: 115:275300  
TITLE: Antimicrobial action of chitin. Chitosan,  
and related compounds and its application  
AUTHOR(S): Uchida, Yasushi  
CORPORATE SOURCE: Fac. Agric., Saga Univ., Saga, 840, Japan  
SOURCE: Kagaku Kogyo (1991), 42(10), 793-9  
CODEN: KAKOAY; ISSN: 0451-2014  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese  
AB A review, with 17 refs., on the author's recent studies concentrating  
antimicrobial activity of chitin, chitosan, and  
polygalactosamine, and their practical application to food  
preservative and pesticide.

L11 ANSWER 30 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1991:608795 CAPLUS  
DOCUMENT NUMBER: 115:208795  
TITLE: Synthesis of poly(3-hydroxyalkanoate) (PHA)  
conjugates: PHA-carbohydrate and PHA-synthetic  
polymer conjugates  
AUTHOR(S): Yalpani, Manssur; Marchessault, Robert H.; Morin,  
Frederick G.; Monasterios, Clevys J.  
CORPORATE SOURCE: Pulp and Paper Res. Cent., Montreal, QC, H3A 2A3, Can.  
SOURCE: Macromolecules (1991), 24(22), 6046-9  
CODEN: MAMOBX; ISSN: 0024-9297  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Poly(3-hydroxybutyrate) (I) graft copolymers with chitosan (II),  
cellulose acetate, poly( $\alpha$ -1,4-galactosamine), and  
poly(ethylenimine), and reaction products with D-glucamine were prepared by  
modifications of the terminal carboxyl function of I. Low-mol.-weight I was  
attached by amidation and esterification reactions to carbohydrate and  
synthetic polymers, yielding new types of branched conjugates. A  
surprisingly low level of I attachment to II led to alterations in the  
properties of the native materials. The I graft copolymer with  
water-insol. II formed viscous, opaque aqueous solns. DSC thermograms of the  
graft copolymer revealed melt transition ( $T_m$ ) values of 150° and  
105°, compared to  $T_m$  of 173° and 116° for the resp.  
native polymer constituents.

L11 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1991:488825 CAPLUS  
DOCUMENT NUMBER: 115:88825  
TITLE: Apparatus and method using a reagent complex  
containing fluorochromes and reactive  
groups-containing optical fiber for assaying  
biologically active substance  
INVENTOR(S): Kobayashi, Takeshi; Honda, Hiroyuki; Shimada, Kenichi  
PATENT ASSIGNEE(S): Ividen Co., Ltd., Japan  
SOURCE: PCT Int. Appl., 83 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9013029	A1	19901101	WO 1990-JP514	19900419
W: JP, US				

10/058,920

JP 2951398	B2	19990920	JP 1990-506243	19900419
US 5401469	A	19950328	US 1994-238782	19940506
JP 2000009732	A2	20000114	JP 1999-68358	19990315
JP 3130513	B2	20010131		

PRIORITY APPLN. INFO.:

JP 1989-97481	A	19890419
JP 1989-97482	A	19890419
JP 1989-185893	A	19890720
JP 1989-314404	A	19891205
JP 1990-506243	A3	19900419
WO 1990-JP514	W	19900419
US 1990-623456	B1	19901218
US 1992-997668	B1	19921228

OTHER SOURCE(S):

MARPAT 115:88825

AB (1) A reagent prepared by complexing fluorochemicals (e.g. coumarin derivative) and a reactive groups-containing compound (e.g. aminoglycan) conjugated with analyte (or analyte-binding substance) through a pair of crosslinking compound, e.g. avidin-biotin, and (2) an optical fiber (resin) having its surface functional group (e.g. NH<sub>2</sub>) linked to analyte-binding substance (or analyte) are used to determine biol. active substance, e.g. antigen, antibody, etc., in medical diagnosis of diseases. Thus, for determining anti-mouse IgG antibody, biotin and anti-IgG antibody were attached to chitosan; fluorochemical NK 1160 was attached to avidin via dicyclohexylcarbodiimide; and mouse IgG was immobilized on optical fiber made of poly(Me methacrylate). Upon assay, the IgG-immobilized optical fiber sensor was sequentially immersed in solns. containing (a) anti-mouse IgG antibody of known concentration, (b) anti-mouse IgG antibody-chitosan-biotin conjugate, and (c) NK1160-avidin conjugate. The fluorescence and anti-mouse IgG antibody concns. were determined. The sensitivity reached 1.2 + 10<sup>-4</sup> mg/mL. The method is sensitive, rapid, simple. An apparatus consisting of an optical fiber, a core surface, a clad layer, a flow cell, a fluorometer, etc. for the assay is presented.

L11 ANSWER 32 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:35520 CAPLUS

DOCUMENT NUMBER: 114:35520

TITLE: Design of polysaccharide-5-fluorouracil conjugates exhibiting antitumor activities

AUTHOR(S): Ouchi, T.; Banba, T.; Huang, T. Z.; Ohya, Y.

CORPORATE SOURCE: Fac. Eng., Kansai Univ., Osaka, 564, Japan

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1990), 31(2), 202-3  
CODEN: ACPPAY; ISSN: 0032-3934

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 5-Fluorouracil (5-FU) conjugates with chitin, chitosan, α-1,4-polygalactosamine; N-acetyl-α-1,4-polygalactosamine, hyaluronic acid, and dextran were prepared and the 1st 4 conjugates showed higher survival effects than free 5-FU against p-388 leukemia in mice. The hyaluronic and dextran conjugates also showed survival effects. The effect increased with increasing degree of substitution of 5-FU units per sugar unit.

L11 ANSWER 33 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:22482 CAPLUS

DOCUMENT NUMBER: 114:22482

TITLE: Polygalactosamine-degrading enzyme A-4 manufacture with Bacillus

INVENTOR(S): Uchida, Yasushi

PATENT ASSIGNEE(S): Higeta Shoyu Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02190185	A2	19900726	JP 1989-6013	19890117

PRIORITY APPLN. INFO.:

JP 1989-6013 19890117

AB The title enzyme (I) is manufactured by culturing Bacillus. I degrades polygalactosamine to give oligogalactosamines, which have physiol. activity, but has no activity against polyhexose, chitin, and chitosan. Bacillus A-4 was shake-cultured for 72 h at 30° in medium containing glucose, yeast extract, peptone, etc. From 15 L culture broth, I 25 g was recovered by (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> precipitation and chromatogs. Enzymic characteristics of I and physiol. and morphol. characteristics of Bacillus A-4 were given.

L11 ANSWER 34 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:631880 CAPLUS  
 DOCUMENT NUMBER: 113:231880  
 TITLE: Conformational difference between chitosan and poly-(1 → 4)-α-D-galactosamine  
 AUTHOR(S): Ogawa, Kozo; Tanaka, Fumio; Okamura, Keizo  
 CORPORATE SOURCE: Radiat. Cent. Osaka Prefect., Sakai, 593, Japan  
 SOURCE: Chitin Chitosan: Sources, Chem., Biochem., Phys. Prop. Appl., [Proc. Int. Conf.], 4th (1989), Meeting Date 1988, 501-10. Editor(s): Skjaak-Braek, Gudmund; Anthonsen, Thorleif; Sandford, Paul A. Elsevier: London, UK.  
 CODEN: 56VDAH  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 AB A symposium report on the conformational difference between (1→4)-linked polysaccharides of α- and β-anomers of D-glucosamine and D-galactosamine as examined by x-ray diffraction and energy calcns.

L11 ANSWER 35 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:624188 CAPLUS  
 DOCUMENT NUMBER: 113:224188  
 TITLE: Design of biodegradable polymer-5-fluorouracil conjugate exhibiting antitumor activities  
 AUTHOR(S): Ouchi, Tatsuro  
 CORPORATE SOURCE: Fac. Eng., Kansai Univ., Osaka, 564, Japan  
 SOURCE: Polymeric Materials Science and Engineering (1990), 62, 412-15  
 CODEN: PMSEDG; ISSN: 0743-0515  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Five conjugates of 5-fluorouracil (5-FU), acid-5FU (I), chitosan -5-FU (II), chitan 5-FU (III), polygalactosamine-5FU, and N-acetyl galactosamine-5-FU were prepared by using pentamethylene or hexamethylene spacer groups in the reaction of 5-FU amines with the resp. polymer. The antitumor activity of these conjugates was tested in female mice (leukemic) after i.p. administration. The prolongation of life for the I conjugate increased with increasing 5-FU concentration The III conjugate increased with increasing 5-FU concentration The III conjugate showed significant antitumor activity, with the activity increasing with increasing 5-FU concentration The galactosamine conjugates also showed high prolongation of life. The II conjugate showed high growth-inhibitory activity against solid tumors.

L11 ANSWER 36 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:55987 CAPLUS  
 DOCUMENT NUMBER: 110:55987  
 TITLE: Novel polygalactosaminidase and its microbial manufacture  
 INVENTOR(S): Tamura, Junichi; Kadowaki, Kiyoshi; Takagi, Hiroaki  
 PATENT ASSIGNEE(S): Higeta Shoyu Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63164884	A2	19880708	JP 1986-308579	19861226
JP 03008757	B4	19910206		

PRIORITY APPLN. INFO.: JP 1986-308579 19861226

AB Novel polygalactosaminidase that hydrolyzes polygalactosamine but not polyhexose, chitin and chitosan, and that has an optimal pH of 4.5-7.0 in citric acid-Na phosphate buffer and its microbial manufacture are described. Pseudomonas species H881 (FERM P-8955) was cultured in a medium containing glucose, yeast extract, and polypeptone at 30° for 20 h and then in a medium containing polygalactosamine, glucose, yeast extract and polypeptone. The culture medium (18 L) was processed to give 50 mg polygalactosaminidase (sp. activity 52 µg GalN/min/mg protein; yield 23.1%).

L11 ANSWER 37 OF 37 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:495395 CAPLUS  
 DOCUMENT NUMBER: 105:95395

10/058,920

TITLE: Aggregation mechanism of sera from cancer patients by galactosaminoglycan (CO-N)  
AUTHOR(S): Kawaguchi, Noboru; Ohgane, Nobuo; Kawashima, Nobuyuki; Sugawara, Shinya; Hirai, Teruo; Takeshita, Yasuyoshi; Tsuru, Sumiaki; Nomoto, Kikuo  
CORPORATE SOURCE: Res. Inst. Life Sci., Snow Brand Milk Prod. Co., Ltd., Tochigi, 329-05, Japan  
SOURCE: Yakugaku Zasshi (1986), 106(6), 446-51  
CODEN: YKKZAJ; ISSN: 0031-6903  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese  
AB Galactosaminoglycan (CO-N), prepared from the culture filtrate of Cordyceps ophioglossoides, aggregated the sera from cancer patients, but not those from healthy donors. The aggregate mainly consisted of haptoglobin, albumin,  $\alpha$ 1-acid glycoprotein,  $\alpha$ 1-antitrypsin, hemopexin, and CO-N. The pre-addition of h-CO-N (.apprx.10,000 daltons polygalactosamine obtained by partial acid hydrolysis of CO-N) resulted in inhibition of the aggregation by CO-N. Desialylation of the serum by neuraminidase treatment also resulted in inhibition of the aggregation. When h-CO-N, N-acetylated CO-N, chitosan, or diethylaminoethyl-dextran instead of CO-N was added to the serum, the aggregation was not observed. When  $\alpha$ 1-acid glycoprotein was added to the serum for healthy donor, the aggregation by CO-N was observed, while haptoglobin or  $\alpha$ 1-antitrypsin did not cause aggregation. Apparently, the binding between galactosaminyl residues of CO-N and sialic acids at non-reducing ends of sugar chains of serum glycoproteins might be required as the essential step to the aggregation by CO-N.